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## Police performance under pressure: Arrest and self-defence skills

Renden, P.G.

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## CHAPTER 7

### **Epilogue**

This thesis concentrated on the influence of anxiety on police officers' performance of arrest and self-defence skills (ASDS). Officers can experience anxiety during situations with physical violence (Anderson et al., 2002), which makes it difficult to perform well (cf., Nieuwenhuys & Oudejans, 2012). On top of that, regular ASDS training seems to lack sufficient frequency and reality-based content to optimally prepare officers to manage violence on duty. Yet, officers are expected to perform effectively in threatening circumstances, and by doing so, to act reasonably and proportionally. Therefore, the thesis' first question is whether officers are capable to show effective ASDS performance under pressure. The second question is whether (and if so, how) ASDS training can be improved to prepare officers better for violent situations. Answers to these questions are presented in the following summary. Then, theoretical and practical implications are provided.

## **Summary**

Given the limited number of training hours as well as the difficulty of performing under pressure, it is worth investigating how experience (in performing ASDS) and anxiety are related to the perceived ability to perform effectively on duty. As no institution in The Netherlands has a systematic and conclusive overview of the use of legal force on duty (Timmer, 2005), in Chapter 2 the aim was to perform a questionnaire study on a large scale to provide data based on officers' experiences from their work. By using an online questionnaire, officers gave insight into how they perceive their ASDS preparation and their ability to manage violence on duty. Furthermore, it was assessed whether additional experience (i.e., by having encountered violence on duty or by practicing martial arts) and self-perceived anxiety have an influence on these perceptions. Results showed that having additional experience was associated with better perceived performance. On the other hand, officers who experienced more anxiety more often reported also more problems. Although most officers reported sufficiently effective performance, they, especially those with additional experience, felt that training frequency is too low and they reported that the currently taught ASDS are only moderately useful (at least with the current amount of training).

The questionnaire's results motivated further investigation of the effects of anxiety on the execution of officers' ASDS performance. Chapter 3 examined officers who kicked, blocked, or restrained an opponent who attacked them with a rubber knife (low anxiety, LA) or a shock knife (high anxiety, HA). Performance was assessed (on a 5-point Likert scale) as well as movement times, posture, and movement velocity and acceleration. Results revealed that performance was worse in the HA compared to the LA condition. Furthermore, kinematic data showed that under increased anxiety, officers' performance contained characteristics of avoidance behaviour, such as faster reactions (to reduce the time being exposed to the threat), leaning further backward (kick), and ducking down (block).

Chapter 4 expanded ASDS performance from just focussing on single skill execution to also take into account accompanying skills such as communication, interpreting a situation, and choosing the correct approach. The experiment consisted of two experimental situations with two different levels of threat, in which officers had to choose and initiate their actions themselves while they had to control and arrest a non-cooperative suspect. It was examined whether threat and trait anxiety influenced state anxiety and how that influenced decision making (e.g., choosing the appropriate actions; timing of initiation of actions) and performance (e.g., quality of communication; execution of skills). Results showed that trait anxiety affected the level of state anxiety, but not any of the decision making and performance variables. As for decision making, only threat determined which skills officers used to gain control over the suspect. Still, in less-threatening scenarios, more state anxiety was related with longer hesitations before officers initiated their actions to gain control. As for performance, higher levels of state anxiety were accompanied by lower scores on overall performance, communication, proportionality of applied force, and quality of skill execution.

Thus, Chapter 2, 3, and 4 consistently showed that anxiety negatively affects ASDS performance. Increasing the current training frequency may be an efficient tool to improve ASDS performance in threatening circumstances (see also Chapter 2). To investigate this assumption, Chapter 5 examined whether officers with additional martial arts training experience performed better in ASDS scenarios under low and high anxiety and were better able to maintain performance under high anxiety than officers who just rely on regular police training. We were especially interested to find out whether training once a week would already lead to better performance under high anxiety. Officers with additional experience in kickboxing or karate/jiu-jitsu (training several times per week), krav maga (training once a week) and officers with no additional experience performed several ASDS. Results showed that officers with additional experience (also those who trained once a week) performed better under high anxiety than officers with no additional experience. Still, the additional experience did not prevent these participants from performing worse under high anxiety compared to low anxiety.

Another possibility to increase ASDS performance in threatening circumstances is to better adjust the content of training to police work on duty (see also Chapter 2). For example, basic reflex-like skills may be learned in less time and easier to apply than the from sports originating ASDS. Therefore, Chapter 6 investigated the effects of reflex-based self-defence training on police performance in arrest situations. Officers received such a training as well as a regular police arrest and self-defence skills training (control training) in a cross-over design. Officers' performance was tested on several variables in six realistic scenarios before, between and after the two trainings. Results showed improved performance after the reflex-based training, while there was no such effect of the regular police training. Improved performance was caused by better communication, alertness, assertiveness, resolution, and converting flinch responses into tactical movements. As

officers were taught to anticipate on possible attacks and to respond with skills based on their primary reflexes, they were better able to perform effectively.

## **Conclusions**

Overall, the reported studies show that anxiety negatively affects ASDS performance (Chapter 2-5), which includes skill execution (Chapter 3), but also accompanying skills such as communication (Chapter 4). In line with recent theoretical developments (Nieuwenhuys & Oudejans, 2012), it appears that under increased anxiety, police officers were less able to inhibit stimulus-driven processing (e.g., fear of getting hit) and enforce goal-directed processing (e.g., kick the opponent back as far as possible) leading to avoidance behaviour. Avoidance behaviour became visible in, among others, leaning backwards during kicking, ducking down during blocking (Chapter 3), or longer hesitations during an arrest (Chapter 4).

Remarkably, performance seemed similarly affected among officers with different levels of experience (Chapter 5). Although more training experience led to better performance, also in threatening situations, it could not prevent that performance was affected by anxiety. Therefore, next to training more frequently, it seems that officers also need to train more under high levels of anxiety to become better able in maintaining goal-driven attention (and thus performance) in threatening situations (cf. Nieuwenhuys & Oudejans, 2011). In line with more realistic training, officers may also benefit from reflex-based self-defence training (Chapter 6). After such training, officers performed better in different situations. These results seem to suggest that reflex-based self-defence training better prepares officers for performing on duty than the current form of ASDS training.

## **Theoretical implications**

In line with many studies concerning anxiety and perceptual-motor performance (e.g., Behan & Wilson, 2008; Causer, Holmes, Smith, & Williams, 2011; Nieuwenhuys, & Oudejans, 2010; Nieuwenhuys, Pijpers, Oudejans, & Bakker, 2008; Wilson, Wood, & Vine, 2009), and more specifically, anxiety and handgun shooting (e.g., Nieuwenhuys & Oudejans, 2010, 2011), this thesis consistently shows that anxiety also negatively affects police officers' ASDS performance (Chapter 2-5). Even additional training experience could not prevent that officers performed worse under the influence of anxiety (Chapter 5).

## **Attention, interpretation and response tendencies**

As explained in the thesis' introduction, in introducing their model concerning anxiety and perceptual-motor performance, Nieuwenhuys and Oudejans (2012) argue that anxiety affects people's attention, interpretation, and response tendencies. As for attention, it has been shown that under the influence of anxiety, attention shifts from goal-direct-

ed (task-relevant) stimuli towards threat-related stimuli (task-irrelevant), which makes it harder to pay attention to task-relevant stimuli (e.g., Nieuwenhuys & Oudejans, 2010, Nieuwenhuys, Savelsbergh, & Oudejans, 2012; Wilson, Vine, & Wood, 2009; Wilson, Wood, & Vine, 2009). As a result, behaviour changes under the influence of anxiety.

As for interpretation, Nieuwenhuys, Savelsbergh, and Oudejans (2012) and Nieuwenhuys, Cañal-Bruland, and Oudejans (2012) found that anxiety affected officer's decision making regarding whether or not to shoot a suspect and when to shoot an approaching suspect who is holding a knife. In both studies, the authors suggested that officers made their decision on the basis of their interpretation of threat indicating that when officers were more anxious, they interpreted the threat as higher than when they were less anxious (see also Bishop, Duncan, Brett, & Lawrence, 2004; Bishop, Duncan, & Lawrence, 2004). However, it was shown in Chapter 4 that anxiety had no effect on which skill officers used to gain control of the suspect. These seemingly contrasting findings can probably be explained by the differences in who had to initiate the first action in the experimental setting. In the earlier studies, officers reacted against the actions of a suspect. In Chapter 4, officers had sufficient time to analyse the situation and respond with the correct action. Still, in Chapter 4 it was also shown that more anxiety was related with longer hesitations before officers acted. Whether this was due to a different interpretation of threat or to an incongruent emotional state with goal-directed behaviour (physically approaching and controlling the suspect) (cf. Stins et al., 2011) could not be determined. Therefore, future research is needed to further investigate the relation between anxiety and decision making.

In any case, officers' initial response tendency seemed to be to stay at a distance and try to verbally convince the suspect to cooperate (even though he had repeatedly made clear that he would not cooperate) rather than to physically approach and control the suspect. Such behaviour is an example of avoidance behaviour which was also shown in Chapter 3 when officers had to counter a knife attack. In this case they reacted sooner to the attack, leaned further backward when executing kicks, and ducked down and blocked lower when executing blocks. The findings in Chapters 3 and 4 indicate that with increased anxiety officers were less able to inhibit stimulus-driven processing and enforce goal-driven processing leading to avoidance behaviour and a decrease in performance. How avoidance behaviour manifested itself in response tendencies seems to depend on the task and situation. Therefore, expectations of the influence of anxiety cannot be simply generalized to all situations.

### **Possible solutions to reduce the effect of anxiety**

The results of Chapter 5 and 6 showed some possible solutions to reduce the negative effects of anxiety on performance. First, more training seems beneficial to perform better under anxiety (Chapter 5). Previous research has shown that people need thousands of hours of deliberate practice (Ericsson, 2014) and hundreds of thousands of repetitions

(e.g., Crossman, 1959; Kottke, 1980) to become expert in perceptual-motor skills. Such investment in training is needed to reach automation, standardisation and stabilisation of skill execution leading to more resistance against the influence of anxiety (Bernstein, 1996). However, literature shows that even elite athletes sometimes perform worse under increased levels of anxiety (e.g., Jordet & Hartman, 2008), which indicated that just training sufficient hours is not sufficient (cf. Duke, Simmons, & Cash, 2009). In fact, it was shown in Chapter 5 that although officers with more training experience performed better under anxiety, their performance was similarly affected by anxiety compared to a low-anxiety condition as performance of officers with less training experience.

As a possible solution, the model by Nieuwenhuys and Oudejans (2012) proposes that training needs to focus on enforcing goal-directed attention (cf. Nieuwenhuys & Oudejans, 2011; Wilson et al., 2011). Specifically for ASDS training, officers in Chapter 6 were learned to focus on signals of imminent danger and how to anticipate on a potential attack. This training indeed resulted in better performance in a series of reality-based scenarios, which indicates that officers' goal-directed attention may have been enforced as a result of the training. In addition, officers also learned to use movements that are compatible with primary reflexes and controlled at lower levels of the central nervous system (cf. Bernstein, 1996). Such movements are assumed to be more robust for the influence of anxiety as less cognitive control (which is less available under anxiety, cf. Bishop Duncan, Brett, & Lawrence, 2004; Bishop, Duncan, & Lawrence, 2004) is necessary.

As a result of more and better training, people's confidence that they possess the necessary resources to successfully perform a task may also be enhanced. The biophysical model of challenge and threat describes that individuals evaluate whether they have the necessary resources to successfully perform a task (Blascovich, 2008). If they believe they do, a challenge state occurs, if not, a threat state occurs. In Chapter 4, it was suggested that the officers who were more anxious experienced a threat state and the ones who were less anxious a challenge state. Literature indeed has shown that a threat state is associated with higher levels of state anxiety (e.g., Qusted et al., 2011; Williams, Cumming, Balanos, 2010), less effective attention (e.g., Blascovich, Seery, Mugridge, Norris, & Weisbuch, 2004; Moore, Vine, Wilson, & Freeman, 2012), and worse performance (e.g., Gildea, Schneider, & Shebilske, 2007). Future research is needed to investigate whether challenge and threat states explain variability in state anxiety among officers, how their states relate to performance, and whether more and/or better training is associated with changes in challenge and threat states.

## **Practical implications**

The thesis' results have a number of important implications for ASDS training. The results from Chapters 2-5 consistently showed that anxiety had a negative effect on performance. Worse performance on duty may have serious consequences for the officers themselves,

but also for their colleagues, others involved (such as suspects), and bystanders. Therefore, it seems necessary to improve ASDS preparation in order to improve performance on duty. On the basis of the thesis' results, two suggestions can be made to improve ASDS training: more training and more realistic training.

The results from Chapter 2 and 5 show that officers' ASDS performance improve considerably when they train more often. That is not surprising given the four to six hours that officers currently have available per year for ASDS training. Several studies have shown that the level of performance and the number of training hours are strongly related (e.g., Ericsson, 2004; Ericsson et al., 1993; Simonton, 2000; Ward et al., 2007). That was also true for officers who participated in Chapter 5; officers who trained martial arts once a week (or more) performed better under anxiety than officers who just rely on the regular ASDS training.

Still, even though more training led to better performance, it could not prevent that anxiety negatively affected officers' performance (Chapter 5). The negative influence of anxiety seems a persistent factor in ASDS performance under pressure (Chapter 2-5). However, several studies have shown that how people train is also of high importance in skill acquisition (Duke, Simmons, & Cash, 2009; Van Rossum, 2000; Ward et al., 2007). Previous research has shown that performance under anxiety increased after reality-based training (e.g., Nieuwenhuys & Oudejans, 2011; Oudejans, 2008; Oudejans & Pijpers, 2009, 2010). Such training seems to enforce goal-directed attention under high levels of anxiety. This is important knowledge for practitioners of dangerous professions (e.g., police officers, firefighters, soldiers), but also for, for instance, surgeons who's performance sometimes literally determines whether someone lives or dies. Also athletes may benefit from reality-based training as their success or failure is often determined at key moments with tremendous levels of pressure.

Specified for ASDS, officers seem to benefit from more reflex-based self-defence training (Chapter 2 and 6). After the reflex-based self-defence training in Chapter 6, officers were better able to notice signals of imminent danger, to anticipate on a potential attack, and in case an attack occurred, to better use their primary reflexes as effective responses. As such, the thesis' outcomes has important practical implications. As one training already improved officers' performance in several situations (and a regular ASDS training had no effect), it seems of high relevance for the Dutch Police to implement such a training concept in their initial training at the Police Academy and in their training for regular police officers at the several police training centres.

To summarize, this thesis shows that the current form of ASDS training is not sufficient to counteract the negative influence of anxiety on ASDS performance. By increasing the current training frequency and making the content more reality-based (with real threats, better anticipation on possible attacks and converting stress responses into tactical movements), officers' performance is expected to increase in situations with physical violence. Better performance is expected to lead to more safety for officers, suspects and citizens in general.



